PATENT COOPERATION TREATY

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WIPO PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference 1146WOORD01 FOR FURTHER ACT		TION See Form PCT/IPEA/416				
International approximation		International filing date (d	ay/month/year)	Priority date (day/month/year)		
PCT	T/EP2004/050414		01.04.2004		03.04.2003	
			ational classification and IPC)		
C07	F7/18, C07D471/1	4				Ì
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Appli	Icant					
	ANA PHARMA AC	3 et al.				
1.	Authority under Art	ticle 35 and trar	nsmitted to the applicant	according to Article	this International Preliminary Exa 36.	amining
2.	This REPORT con	sists of a total o	of 4 sheets, including thi	s cover sheet.		
3.			y ANNEXES, comprising		4.11	
			o the International Burea			
	sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).					
	sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the					
	Supplemental Box. b. (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)), containing a					
	coguence li	ietina and <i>l</i> or tat	oles related thereto, in co	mputer readable to	irm only, as indicated in the Supi	olemental
	Box Relatin	ng to Sequence	Listing (see Section 802	of the Administrati	ve iristi uctions).	
4. This report contains indications relating to the following items:						
	⊠ Box No. I	Basis of the opi	inlon			
		Priority				
				d to novelty, invent	tive step and industrial applicabili	ity
		Lack of unity of			n de la companie de l	
	⊠ Box No. V	Reasoned state applicability; cit	ement under Article 35(2 ations and explanations) with regard to nove supporting such st	relty, inventive step or industrial atement	
		Certain docum				
			in the international appl			
	☑ Box No. VIII	Certain observ	ations on the internation	al application		
Dat	te of submission of the	demand		Date of completion	of this report	
14.10.2004			22.02.2005			
Nar	Name and mailing address of the international			Authorized Officer		oches Petenten.
preliminary examining authority:				:	11/1	
D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d			Elliott, A			
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✓INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

	Вох	No. I	Basis of the report			
1.	With filed	regard , unless	to the language , this report is based on the international application in the language in which it was otherwise indicated under this item.			
		which i ☐ inte ☐ pub ☐ inte	port is based on translations from the original language into the following language, s the language of a translation furnished for the purposes of: rnational search (under Rules 12.3 and 23.1(b)) lication of the international application (under Rule 12.4) rnational preliminary examination (under Rules 55.2 and/or 55.3)			
2.	With regard to the elements* of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):					
	Des	cription	, Pages			
	1-6		as originally filed			
	Claims, Numbers					
	1-10	ס	as originally filed			
		a sequ	uence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing			
3.		the the the the	mendments have resulted in the cancellation of: e description, pages e claims, Nos. e drawings, sheets/figs e sequence listing (specify): y table(s) related to sequence listing (specify):			
4	ha	d not be ppleme the the the the the the the the the th	eport has been established as if (some of) the amendments annexed to this report and listed below een made, since they have been considered to go beyond the disclosure as filed, as indicated in the intal Box (Rule 70.2(c)). de description, pages e claims, Nos. de drawings, sheets/figs de sequence listing (specify): my table(s) related to sequence listing (specify):			
	*	If i	tem 4 applies, some or all of these sheets may be marked "superseded."			



JINTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial Box No. V applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims

1-10

No:

Claims

Inventive step (IS)

Yes: Claims

Claims

Industrial applicability (IA)

No:

1-10

Yes: Claims No: Claims 1-10

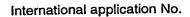
2. Citations and explanations (Rule 70.7):

see separate sheet

Certain observations on the international application Box No. VIII

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet



INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (SEPARATE SHEET)

PCT/EP2004/050414

The application is directed to a process for dehydrogenating compounds of formula (2) to compounds of formula (1).

The following documents will be referred to in this opinion:

D1: WO-A-0234749

D2: WO-A-0172757

D3: Journal Of The American Chemical Society (05-01-1955), 77(1), 55-60

D4: Journal Of The American Chemical Society (20-09-1953), 75(18), 4493-4495

D5: Journal Of The American Chemical Society (19-04-1949), 71(4), 1395-1396

Re Item V.

With respect to the prior art documents D1-D5, the subject-matter of the present application is to be regarded as novel.

However, said subject-matter is not to be regarded as inventive on the following grounds:

As closest prior art, documents D1 and D2 can be cited as they both disclose processes for converting compounds according to formula (2) into compounds of formula 1 (cf. D1, page 58, lines 1-11 where 2,3-dichloro-5,6-dicyano-p-benzoquinone (ddq) is used as the reagent and D2, page 18, lines 1-10 where manganese dioxide is used as the reagent).

The object of the present application is therefore to be seen as the provision of an alternative method for converting compounds of formula (2) into those of formula (1).

The solution according to the present application is to use N-bromosuccinimide (NBS) as the dehydrogenating reagent.

The use of NBS to carry out this reaction is not regarded as inventive as NBS is already known to perform similar dehydrogenation reactions, cf., for example, documents D3-D5.

Re Item VIII.

Claims 2 and 3 would appear to contain errors in that R2 is defined as bromine.

Under the section prior art, the page numbers from first citation from the JACS should read 55-60 and not 55-69.